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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Hitoshi Takeshita

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EXAMINER

GARCIA, LUIS

ART UNIT

PAPER NUMBER

2613

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.		Applicant(s)	
	10/613,070		TAKESHITA, HITOSHI	
	Examiner		Art Unit	
	Luis F. Garcia		2613	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-74 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-7, 9-10, 15-27, 32-39, 41-43, 45-46, 50-57, 60-63, 65-66, 69-72 is/are rejected.
- 7) ☒ Claim(s) 2, 3, 8, 11-14, 28-31, 40, 44, 47-50, 58, 59, 64, 67, 68, 73 and 74 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

1. Claims 1, 4-7, 9-10, 15-17, 21-27, 32-34, 38-39, 41-43, 45-56, 50-53, 60-63, 65-66 and 69-72 is rejected under 35 U.S.C. 102(e) as being anticipated by Chow et al (US 2002/0145776) hereinafter referred to as Chow.

Regarding claim 1, Chow discloses an optical signal transmission system including at least one optical signal transmitter and at least one optical signal receiver (**FIG. 5 (Transmitter output signals) and FIG. 6 (detectors/receivers)**), wherein said at least one optical signal transmitter generates at least one optical identifier belonging to and being different in wavelength from at least one main optical signal (**FIG. 5 (Marker Chan 12) and ABSTRACT/¶0061 in which the marker channel acts to identify the information code/data and ensures proper routing**);

wherein said at least one optical signal transmitter performs a wavelength-multiplexing of said at least one main optical signal and said at least one optical

Art Unit: 2613

identifier to transmit at least one wavelength-multiplexed optical signal to said at least one optical signal receiver (**ABSTRACT and FIGs. 4-6 in which the marker channel is multiplexed with the at least one main optical signal for transmission to detectors/receivers (FIG. 6);**

wherein said at least one optical signal receiver performs a wavelength-demultiplexing of said at least one wavelength-multiplexed optical signal to generate said at least one main optical signal and said at least one optical identifier (**FIG. 6 (detectors, filter)/FIG. 7 (204-code detector, DEMUX) and ¶0071,0077 in which the at multiplexed signal is demuxed into at least one main optical signal and at least one marker channel (optical identifier), via tunable optical filters); and**

wherein said at least one optical signal receiver further verifies whether or not a correct transmission route is established, based on said at least optical identifier with reference to at least one set corresponding data, which include a first relationship in correspondence between said at least one main optical signal and said at least one optical identifier (**¶0079 in which the marker channel (optical identifier) and the at least one main optical signal, form a parallel word (relationship) holding vital information (e.g. destination address, channel number, open bandwidth after channel, packet length), when the two signals are detected for the purpose of verifying if the packet has been routed properly (whether or not a correct transmission route has been established), e.g. ¶0077 match the overlay code with the detector to see if**

Art Unit: 2613

the destination is correct, ¶069 redirect the optical packet based on overlay coding (marker channel)).

Regarding claim 4, Chow discloses the optical signal transmission system as claimed in claim 1 as applied above.

Chow further discloses wherein said at least one optical signal transmitter further generates said at least one set corresponding data (**FIG. 5 (Data CHAN 1-11) and ¶0061 in which corresponding data is encoding on to respective wavelength channels**), and supplies said at least one optical signal receiver with said at least one set corresponding data (**FIG. 6 in which the at least one optical signal receiver receives the corresponding data from the wavelength channels**).

Regarding claim 5, Chow discloses the optical signal transmission system as claimed in claim 4 as applied above.

Chow further discloses including memory being coupled to said optical signal transmitter and said optical receiver, and said memory storing said at least one set corresponding data (**¶0137 in which a regeneration node detects the overlay encoding (FIG. 5) and corresponding data for the purpose of regenerating/transmitting a less distorted signal, in which memory is used, e.g. coupled to both transmitter and receiver elements**).

Regarding claim 6, rejected as stated in claim 5 in which memory is as data storing station.

Art Unit: 2613

Regarding claim 7, rejected as stated in claim 7 in which memory stores corresponding data that is to be regenerated; thereby, storing previously regenerated data is within the scope of Chow's invention.

Regarding claim 9, Chow discloses the optical signal transmission system as claimed, in claim 1 as applied above.

Chow further discloses including a wavelength-multiplexed optical network having a plurality of wavelength-multiplexed optical signal transmission routes, through which said at least one wavelength-multiplexed optical signal is transmitted from said at least one optical signal transmitter to said at least one optical signal receiver (**FIG. 4 in which a DWDM network consist of a plurality of WDM transmission routes**).

Regarding claim 10, Chow discloses the optical signal transmission system as claimed in claim 1 as applied above.

Chow further discloses further including an optical switch having a plurality of selectable wavelength-multiplexed optical signal transmission routes, through which said at least one wavelength-multiplexed optical signal is transmitted from said at least one optical signal transmitter to said at least one optical signal receiver (**FIG. 8 (222-switch array) and ¶0090 in which the switch has a plurality of transmission routes through which to transmit the optical signal to the at least one optical receiver**).

Regarding claim 15, rejected as stated in claim 1 rejection in which the data channel (set of corresponding data at first wavelength) "matches up" (includes a relationship) with the marker channel (optical identifier at second

Art Unit: 2613

wavelength) in order to determine if the proper destination has been reached, e.g. correct transmission route established. Chow further discloses that the receivers use filters to selectively detect the demultiplexed wavelengths ¶0071, e.g. at least one optical identifier.

Regarding claim 16, Chow discloses the optical signal transmission system as claimed in claim 15 as applied above.

Chow further discloses wherein each of said at least one optical signal transmitter further includes:

at least one set of a main optical signal generator for generating said main optical signal with said first wavelength (**FIG. 5 (Data channels) in which the data channels are inherently generated by at least one main optical signal generator**), and an optical identifier generator for generating said optical identifier with said second wavelength and for generating said at least one set corresponding data (**¶0060 in which the overlay code (marker channel) contains packet steering information corresponding to the main data signal**); and

a multiplexer for wavelength-multiplexing said at least one main optical signal and said at least one optical identifier to generate said wavelength-multiplexed optical signal (**ABSTRACT and FIGs. 4-6 in which the marker channel is multiplexed with the at least one main optical signal for transmission to detectors/receivers (FIG. 6)**); and

wherein each of said at least one optical signal receiver further includes:

Art Unit: 2613

a demultiplexer for wavelength-demultiplexing said wavelength-multiplexed optical signal to generate said at least one main optical signal and said at least one optical identifier (**FIG. 6 (detectors, filter)/FIG. 7 (204-code detector, DEMUX)**) and ¶0071,0077 in which the at multiplexed signal is demuxed into at least one main optical signal and at least one marker channel (optical identifier), via tunable optical filters);

at least one set of a main optical signal receiver for selectively receiving said at least one main optical signal with said first wavelength, and an optical identifier receiver for selectively receiving said at least one optical identifier with said second wavelength (¶0071,0077 in which the detectors selectively receive the at least one main optical signal at a first wavelength and the marker channel (optical identifier) at a second wavelength, via tuned optical filters), and

wherein said optical identifier receiver further verifies whether said correct transmission route is established based on said at least optical identifier with reference to said at least one set corresponding data (¶0079 in which the marker channel (optical identifier) and the at least one main optical signal, form a parallel word (relationship) holding vital information (e.g. destination address, channel number, open bandwidth after channel, packet length), when the two signals are detected for the purpose of verifying if the packet has been routed properly (whether or not a correct transmission route has been established), e.g. ¶0077 match the overlay

Art Unit: 2613

code with the detector to see if the destination is correct, ¶069 redirect the optical packet based on overlay coding (marker channel)).

Regarding claim 17, rejected as stated in claim 16 rejection in which the detectors (main optical receiver and optical identifier receiver) include tunable optical filters for selectively receiving respective wavelengths in order to “match” up the signals, e.g. ¶0079 in which the marker channel (optical identifier) and the at least one main optical signal, form a parallel word (relationship) holding vital information (e.g. destination address, channel number, open bandwidth after channel, packet length), when the two signals are detected for the purpose of verifying if the packet has been routed properly (whether or not a correct transmission route has been established), e.g. ¶0077 match the overlay code with the detector to see if the destination is correct, ¶069 redirect the optical packet based on overlay coding (marker channel).

Regarding claims 21, 22, 38, 39, 45, 57, 60, 71 and 72, rejected as stated in claim 1 rejection.

Regarding claims 23, 41 and 61, rejected as stated in claim 5 rejection.

Regarding claims 24, 42 and 62, rejected as stated in claim 6 rejection.

Regarding claims 25, 43 and 63, rejected as stated in claim 7 rejection.

Regarding claim 26 and 65, rejected as stated in claim 9 rejection.

Regarding claims 27 and 66, rejected as stated in claim 10 rejection.

Regarding claims 32, 51 and 69, rejected as stated in claim 15 rejection.

Regarding claims 33 and 70, rejected as stated in claim 16 rejection.

Regarding claims 34, rejected as stated in claim 17 rejection.

Regarding claim 46, rejected as stated in claim 1 and 10 rejections.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 18-20, 35-37 and 52-56 are rejected** under 35 U.S.C. 103(a) as being unpatentable over Chow.

Regarding claim 18, Chow discloses the optical signal transmission system as claimed in claim 16 as applied above.

Chow further discloses a plurality of main optical signal generators (FIG. 5) and receivers (FIG. 6) and a single marker channel (FIG. 5)(optical identifier generator).

Chow does not expressly disclose a plurality of optical identifier generators and receivers. However, it would have been obvious to one of ordinary skill in the art that each data channel (wavelength) can have a corresponding marker channel (optical identifier), e.g. ¶0061 in which the marker channel corresponds to only channel 11. The motivation being that allows each data channel to be routed independently of the other data channels; thereby, allowing for diverse wavelength routing, e.g. no grouping of multiple wavelength channels going to the same destination. NOTE: a plurality of optical identifiers

Art Unit: 2613

are use in conjunction with respective data channel for the purpose of verifying transmission routes as disclosed in claim 16.

Regarding claims 19 and 20, Chow discloses the limitation of claims 19 and 20 as stated in claim 16 and 17 rejections.

Chow does not expressly disclose an arrayed waveguide grating. However, an arrayed waveguide grating is notoriously well known in the art to be one type of multiplexer/demultiplexer element, e.g. Chow ¶0071-gratings or spectrometers can be used as a demultiplexer. Therefore, making the use of an AWG mux/demux obvious in view of Chow.

Regarding claims 35, 50 and 54, rejected as stated in claim 18 rejection.

Regarding claim 36 and 55, rejected as stated in claim 19 rejection.

Regarding claim 37 and 56, rejected as stated in claim 20 rejection.

Regarding claim 52, rejected as stated in claim 16 rejection.

Regarding claim 53, rejected as stated in claim 17 rejection.

Allowable Subject Matter

3. **Claims 2-3, 8, 11-14, 28-31, 40, 44, 47-50, 58-59, 64, 67-68 and 73-74**

objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Art Unit: 2613

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Luis F. Garcia whose telephone number is (571)272-7975. The examiner can normally be reached on 8-4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ken N. Vanderpuye can be reached on (571)272-3078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LG


KENNETH VANDERPUYE
SUPERVISORY PATENT EXAMINER